Master Plan Policy Paper #4-A: Making Best Use of Public Resources to Enhance Opportunity in Higher Education

May 1999

ISSUE AREA

How can existing facilities be better utilized to enhance higher education opportunity for Washington citizens?

POLICY ISSUES

- How will Washington State integrate e-learning technology with the use of physical spaces to expand and improve educational opportunity?
- How can the planning for additional enrollment capacity encourage and reflect institutional operating practices that promote the full use of existing and planned spaces?
- Should planning for enrollment growth be based on modifying institutional space utilization practices to optimize use of existing and planned physical spaces?
- What actions can be taken to enhance the quality of the learning environment and improve utilization practices?

STUDY QUESTIONS

- What is the existing enrollment capacity of the public institutions of higher education under current utilization standards for classrooms, class labs, and faculty offices?
- How do adjustments in (1) the average weekly hourly use of instructional space and (2) the average weekly hours of "seat-time" in classrooms and class labs affect projected enrollment capacity?
- How can these adjustments in space utilization be implemented to improve the quality of the educational experience?
- What are the constraints associated with achieving increased utilization levels?
- What is the practical range of institutional growth capacity?

OVERVIEW

As part of its Master Plan work session conducted at on April 14, staff provided a preliminary analysis of institutional enrollment capacity. That analysis included a review of the methods used in estimating enrollment capacity. And it covered the calculations of enrollment capacity for the public four-year and two-year institutions using existing space utilization standards.

The work session included a discussion of the feasibility and effect of changing utilization practices to achieve greater enrollment capacity. Specifically, the Board review data to demonstrate the impact of increasing the average number of hours that classroom and class lab stations are used each week. Also, the board discussed the effect of reducing weekly "seat-time" through e-learning while maintaining or even increasing actual student/faculty contact hours. The Board discussed the distinction between capacity estimates based upon calculation per utilization standards, and the actual enrollment capacity of an institution given regulatory, physical, and cultural growth constraints.

The purpose of this paper is to compare the earlier reported *calculated* capacity estimates and institutional growth estimates to the public sector year 2010 enrollment goals being developed and proposed in the Master Plan. Based upon this comparison, this paper also offers recommendations concerning utilization goals, enrollment planning and management, and capital budgeting priorities.

Enrollment Capacity

Tables 1-3 summarize the student FTE enrollment capacity associated with classrooms, class labs, and faculty office space for the four-year institutions and the community and technical college system.[1] These capacity estimates are based upon both existing and planned space. When capacity is calculated on the basis of existing utilization standards, the following data are generated:

- The four-year institutions could accommodate about 118,000 student FTE in existing and planned classrooms, 121,000 student FTE in class labs; when calculated at existing student-to-faculty ratios, there are sufficient faculty offices to serve about 98,000 student FTE.

- The community and technical colleges could accommodate about 97,000 student FTE in existing and planned classrooms, and 136,000 student FTE in class labs.[2, 3]

[1] See Appendix A for four-year institution and community and technical college detail.
[2] The class lab capacity data for the community and technical colleges continues to be refined and represents an estimated system average for weekly science lab contact hours.
[3] The community and technical college capacity estimates are system totals. Appendix A contains the specific estimates for each of the colleges.

Table 4 provides the institutional estimates of growth capacity for the year 2010 and compares these levels with the total classroom capacity estimated in Table 1. As discussed at the April work session, an institution's estimate of growth capacity reflects the enrollment level that can be accommodated in view of regulatory or physical constraints, as well as institutional policies concerning the desired enrollment level for a campus and its programs. These institutional estimates assume that capital projects in the planning stage will be adequately funded for construction.

As can be seen in Table 4, the public four-year institutions are reporting a year 2010 growth capacity of about 127,000 student FTE, some 9,000 FTE above the calculated capacity associated with existing and planned classroom stations.

The State Board for Community and Technical Colleges (SBCTC) has reported projected enrollment levels for its 33 campuses in the year 2010 to be about 146,000 student FTE. This level exceeds the calculated capacity by nearly 50,000 student FTE (see Table 4 and Appendix A).

Increasing Enrollment Capacity by Changing Utilization Practices

Table 5 illustrates the effects on calculated capacity of (1) increasing the hours of weekly classroom station use to 24 hours per week, and (2) decreasing the average weekly seat-hours in classrooms by 1.5 and 2.0 hours per week through non-seat time, e-learning lecture contact hours.

For the four-year public institutions classroom enrollment capacity increases from the current standards estimate of approximately 118,000 FTE to 149,000 FTE under the following assumptions:

- moving to an average of 22 hours per week of scheduled classroom station hours; and
- assuming that the average student FTE would generate one and one-half lecture contact hours per week through e-learning.

If 24 scheduled classroom station hours per week and two hours of e-learning were assumed, classroom capacity would increase to about 171,000 student FTE.

For the community and technical colleges, classroom enrollment capacity increases from the current standards estimate of approximately 97,000 FTE to 111,000 FTE under the following scenario:

- maintaining the current SBCTC standard of an average of 23 hours per week of scheduled classroom station hours; and
- assuming that the average student FTE would generate one and one-half lecture contact hours per week through e-learning.

If 24 scheduled classroom station hours per week and two hours of e-learning were assumed, classroom capacity would increase to about 116,000 student FTE.

With respect to the four-year institutions, it is important to note that the effect of increased utilization and e-learning assumptions appears to exceed currently defined estimates of institutional growth capacity. However the premises underlying these growth constraints may change or not be relevant to new assumptions about student participation characteristics. In many ways, current notions about the permitted or desired level of campus enrollment assume both a continuation of existing trends in the daily and hourly use of facilities by on-campus students, and the convention of "seat-time" as the method of generating contact and credit hours.

Currently, it is difficult to distinguish between total campus *enrollment* from daily on-campus *attendance*. But as facilities are used more fully through the day and week, and as e-learning opportunities reduce the concentration of students on-campus at any one time, then it will be possible to differentiate total campus enrollment from daily on-campus attendance. In the future, institutions actually may generate many more FTE than the amount generated through traditional "seat-time" contact hours.

The 1999-2001 Capital Appropriations Act contains proviso language that addresses this point. This language (Section 916 – Substitute House Bill 1165) requires the four-year institutions to report to the Office of Financial Management and the HECB on plans to increase branch campus enrollment capacities through increased utilization and e-learning initiatives.

2010 Enrollment Goal Analysis

Table 6 compares fall 1998 student-FTE enrollment levels with both calculated classroom capacity and institutional growth levels to state-funded 2010 enrollment goals for public institutions. For the four-year institutions there is close correspondence between calculated capacity and the state-funded enrollment goals for 2010 (118,000 student FTE and 117,000 student FTE, respectively). Additionally, the four-year institutions have reported an institutional growth level totaling about 128,000 student FTE.

With respect to the community and technical colleges, the enrollment levels reported by the SBCTC for 2010 (146,200 student FTE) exceed the calculation of classroom capacity per current standards by about 50,000 student FTE. However, this campus enrollment projection closely parallels the year 2010 enrollment goal of 144,000 student FTE for the community and technical colleges.

These data suggest that, in order to meet the Board's policy of sustaining the current participation level for lower-division enrollment, and increasing the upper-division and graduate participation levels to the national average by 2010, integrated and consistent capital budgeting priorities will be needed between the two-year and four-year sectors. Specifically, capital spending priorities

should recognize areas of population growth and density, institutional utilization practices, and initiatives concerning enrollment distribution within the four-year sector.

In summary, it appears that the Board's 2010 enrollment goals for upper-division and graduate participation can be met if (1) all projected classroom and class lab capacity throughout the state is utilized, and (2) funding for access-related projects currently being planned is obtained. Achieving this classroom and class lab enrollment capacity will require additional office space, student support space, and infrastructure improvements at the campuses of the four-year institutions.

However, the outlook for lower-division enrollment is not as clear. Calculated capacity at the community and technical colleges is significantly below the Board's 2010 enrollment goals. While the SBCTC has reported institutional growth levels that mirror the goals, neither existing capacity, projects being planned, nor the content of the SBCTC's current 10-year capital plan indicate how the additional growth capacity reported by the SBCTC will be achieved.

Recommendations: Making Best Use of Public Resources to Enhance Opportunity in Higher Education

For both the public four- and two-year sectors, it is recommended that:

1. The Board adopt the utilization goal of 22 average weekly hours of classroom station utilization by 2010 and 24 average hours by the year 2020.

2. The Board incorporate an e-learning assumption of 1.5 weekly lecture and lab hours by 2010 and 2 hours by 2020 and monitor this utilization on an annual basis with capacity estimates adjusted accordingly.

For the public four-year institutions, it is recommended that:

3. (a) All capital projects currently being planned, designed, and constructed should be funded and completed to create classroom and class lab capacity needed to accommodate 2010 enrollment goals; and

(b) Additional office, student support space, and other infrastructure enhancements will be needed on the campuses of the four-year institutions to accommodate enrollment growth.

4. The Master Plan recommend enrollment policies to fully utilize excess available capacity at upper-division institutions in eastern Washington.

5. On-going planning efforts be funded to promote upper-division access opportunities in the Puget Sound area.

For the community and technical colleges, it is recommended that:

6. The Board request the SBCTC to re-examine its current 10-year capital plan in view of the projected enrollment and space shortages within the community and technical college system, and to advise the Board on how the SBCTC capital budgeting process and priorities will address lower-division enrollment demand in high population growth regions.

TABLE 1
STUDENT FTE CAPACITY per CURRENT STANDARDS by TYPE OF CAPACITY
CLASSROOMS

SECTOR INSTITUTION	EXISTING CAPACITY	UNDER CNSTRCTN.	IN DESIGN PHASE	1999-2001 PROPOSED	TOTAL	FALL 1998 ENROLLMENT
PUBLIC FOUR-YEAR TOTAL						
Main	**84,642**	**2,580**	**8,562**	**761**	**96,545**	**79,167**
Branch	**12,065**	**1,480**	**7,291**	**975**	**21,811**	**6,403**
All Sites	**96,707**	**4,060**	**15,853**	**1,736**	**118,356**	**85,570**
UNIVERSITY OF WASHINGTON						
Main	34,345	1,843	1,141	761	38,090	33,122
Branch	1,852	1,480	2,323	0	5,655	1,830
WASHINGTON STATE UNIVERSITY						
Main	18,314	188	3,586	0	22,088	17,898
Branch	7,260	0	2,680	912	10,852 (1)	2,004 (2)
WESTERN WASHINGTON UNIVERSITY						
Main	9,039	0	1,694	0	10,733	11,062
Branch	0	0	0	63	63	0
THE EVERGREEN STATE COLLEGE						
Main	3,427	0	2,059	0	5,486	4,085
Branch	492	0	0	0	492	158
CENTRAL WASHINGTON UNIVERSITY						
Main	8,973	0	0	0	8,973	6,917
Branch	1,141	0	2,288	0	3,429	978
EASTERN WASHINGTON UNIVERSITY						
Main	10,544	549	82	0	11,175	6,083
Branch	1,320	0	0	0	1,320	1,433
COMMUNITY AND TECHNICAL COLLEGES						
Main	**82,079**	**5,778**	**262**	**2,399**	**90,518**	**113,730**
Branch	**5,806**	**154**	**427**	**0**	**6,387**	**na**
All Sites	**87,885**	**5,932**	**689**	**2,399**	**96,905**	**na**
TOTAL: ALL PUBLIC INSTITUTIONS						
Main	**166,721**	**8,358**	**8,824**	**3,160**	**187,063**	**192,897**
Branch	**17,871**	**1,634**	**7,718**	**975**	**28,198**	**6,403**
All Sites	**184,592**	**9,992**	**16,542**	**4,135**	**215,261**	**199,300**

(1) Includes approximately 685 EWU FTE at Riverpoint. (2) Includes approximately 360 EWU FTE at Riverpoint.

TABLE 2
STUDENT FTE CAPACITY per CURRENT STANDARDS by TYPE OF CAPACITY
CLASS LABS

SECTOR INSTITUTION	EXISTING CAPACITY	UNDER CNSTRCTN.	IN DESIGN PHASE	1999-2001 PROPOSED	TOTAL	FALL 1998 ENROLLMENT
PUBLIC FOUR-YEAR TOTAL						
Main	**90,146**	**699**	**4,952**	**1,789**	**97,586**	**79,167**
Branch	**2,243**	**2,470**	**18,822**	**144**	**23,679**	**6,403**
All Sites	**92,389**	**3,169**	**23,774**	**1,933**	**121,265**	**85,570**
UNIVERSITY OF WASHINGTON						
Main	35,683	202	468	1,384	37,737	33,122
Branch	490	2,470	9,352	0	12,312	1,830
WASHINGTON STATE UNIVERSITY						
Main	16,872	76	1,877	355	19,180	17,898
Branch	1,716	0	5,582	0	7,298	2,004
WESTERN WASHINGTON UNIVERSITY						
Main	9,780	0	1,395	0	11,175	11,062
Branch	0	0	0	144	144	0
THE EVERGREEN STATE COLLEGE						
Main	3,230	0	875	50	4,155	4,085
Branch	37	0	0	0	37	158
CENTRAL WASHINGTON UNIVERSITY						
Main	14,745	0	0	0	14,745	6,917
Branch	0	0	3,888	0	3,888	978
EASTERN WASHINGTON UNIVERSITY						
Main	9,836	421	337	0	10,594	6,083
Branch	0	0	0	0	0	1,433
COMMUNITY AND TECHNICAL COLLEGES						
Main	**75,263**	**22,881**	**28,373**	**6,103**	**132,620**	**113,730**
Branch	**3,799**	**na**	**na**	**na**	**3,799**	**na**
All Sites	**79,062**	**22,881**	**28,373**	**6,103**	**136,419**	**na**
TOTAL: ALL PUBLIC INSTITUTIONS						
Main	**165,409**	**23,580**	**33,325**	**7,892**	**230,206**	**192,897**
Branch	**6,042**	**2,470**	**18,822**	**144**	**27,478**	**6,403**
All Sites	**171,451**	**26,050**	**52,147**	**8,036**	**257,684**	**199,300**

TABLE 3
STUDENT FTE CAPACITY per CURRENT STANDARDS by TYPE OF CAPACITY
INSTRUCTIONAL OFFICES--FOUR YEAR MAIN CAMPUSES

	EXISTING CAPACITY	UNDER CNSTRCTN.	IN DESIGN PHASE	1999-2001 PROPOSED	TOTAL	FALL 1998 ENROLLMENT
PUBLIC FOUR-YEAR TOTAL	**89,448**	**1,764**	**4,146**	**2,307**	**97,665**	**79,167**
UNIVERSITY OF WASHINGTON	34,413	1,699	887	903	37,902	33,122
WASHINGTON STATE UNIVERSITY	15,515	65	487	1,097	17,164	17,898
WESTERN WASHINGTON UNIVERSITY	11,922	0	1,188	307	13,417	11,062
THE EVERGREEN STATE COLLEGE	4,539	0	1,544	0	6,083	4,085
CENTRAL WASHINGTON UNIVERSITY	13,422	0	0	0	13,422	6,917
EASTERN WASHINGTON UNIVERSITY	9,637	0	40	0	9,677	6,083

TABLE 4
COMPARISON OF CALCULATED CLASSROOM ENROLLMENT CAPACITY
TO INSTITUTIONAL YEAR 2010 GROWTH LEVEL

	FALL 1998 ENROLLMENT	CALCULATED CAPACITY	INSTITUTIONAL GROWTH CAPACITY
PUBLIC FOUR-YEAR TOTAL			
Main	**79,167**	**96,545**	**99,904**
Branch	**6,403**	**21,811**	**27,336**
All Sites	**85,570**	**118,356**	**127,240**
UNIVERSITY OF WASHINGTON			
Main	33,122	38,090	38,410
Branch	1,830	5,655	14,090
WASHINGTON STATE UNIVERSITY			
Main	17,898	22,088	23,000
Branch	2,004	10,852	8,700
WESTERN WASHINGTON UNIVERSITY			
Main	11,062	10,733	12,500
Branch	0	63	65
THE EVERGREEN STATE COLLEGE			
Main	4,085	5,486	5,000
Branch	158	492	500
CENTRAL WASHINGTON UNIVERSITY			
Main	6,917	8,973	9,819
Branch	978	3,429	2,661
EASTERN WASHINGTON UNIVERSITY			
Main	6,083	11,175	11,175
Branch	1,433	1,320	1,320
COMMUNITY AND TECHNICAL COLLEGES			
Main	**113,730**	**90,518**	**146,200**
Branch	**na**	**6,387**	**NA**
All Sites	**na**	**96,905**	**146,200**
TOTAL: ALL PUBLIC INSTITUTIONS			
Main	**192,897**	**187,063**	**246,104**
Branch	**6,403**	**28,198**	**27,336**
All Sites	**199,300**	**215,261**	**273,440**

TABLE 5

CLASSROOM FTE CAPACITY BY ALTERNATIVE AVERAGE WEEKLY STATION USE HOURS & ALTERNATIVE E-LEARNING ASSUMPTIONS

FOUR-YEAR INSTITUTIONS

AVG. WEEKLY STATION HRS.	E-LEARNING ASSUMPTION (Weekly Non-Seat Time Instruction) 0 Hours	1.5 Hours	2.0 Hours
18.00	106,520	121,995	128,203
18.50	109,479	125,383	131,764
19.00	112,438	128,772	135,325
19.50	115,397	132,161	138,886
20.00	**118,356**	**135,550**	**142,448**
20.50	121,315	138,938	146,009
21.00	124,274	142,327	149,570
21.50	127,233	145,716	153,131
22.00	130,192	149,105	156,692
22.50	133,151	152,493	160,254
23.00	136,109	155,882	163,815
23.50	139,068	159,271	167,376
24.00	142,027	162,660	170,937

COMMUNITY AND TECHNICAL COLLEGES

AVG. WEEKLY STATION HRS.	E-LEARNING ASSUMPTION (Weekly Non-Seat Time Instruction) 0 Hours	1.5 Hours	2.0 Hours
18.00	75,548	86,807	91,345
18.50	77,646	89,218	93,882
19.00	79,745	91,630	96,419
19.50	81,843	94,041	98,957
20.00	83,942	96,452	101,494
20.50	86,041	98,863	104,031
21.00	88,139	101,275	106,569
21.50	90,238	103,686	109,106
22.00	92,336	106,097	111,644
22.50	94,435	108,509	114,181
23.00	**96,533**	**110,920**	**116,718**
23.50	98,632	113,331	119,256
24.00	100,730	115,743	121,793

TABLE 6

COMPARISON OF CALCULATED CLASSROOM ENROLLMENT CAPACITY TO INSTITUTIONAL YEAR 2010 GROWTH LEVEL

	FALL 1998 ENROLLMENT	CALCULATED CAPACITY	INSTITUTIONAL GROWTH CAPACITY	2010 ENROLLMENT GOALS
PUBLIC FOUR-YEAR TOTAL	**85,570**	**118,356**	**127,662**	**117,105**
All Sites				
COMMUNITY AND TECHNICAL COLLEGES	**113,730**	**96,905**	**146,200**	**144,228**
Main				
TOTAL: ALL PUBLIC INSTITUTIONS	**199,300**	**215,261**	**273,862**	**261,333**